

Understanding the Motivation of Environmental Activists: A Comparison of Self-Determination Theory and Functional Motives Theory

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Abstract

What keeps environmental activists motivated and committed to their activism, despite the frustrations and uncertain outcomes of their work? To answer this question, we compared measures derived from self-determination theory (SDT) and functional motives theory (FMT), hypothesizing that SDT's internal motivation measures would best predict environmental commitment and the avoidance of emotional exhaustion. We studied US Midwestern region activists (Study 1) and activists affiliated with the Peru and Paris climate change summits (Study 2), finding in both studies that the five SDT and the six FMT subscales could all be located on two factors interpretable in terms of SDT's distinction between internal and external motivation, and that the 11 subscales could also be located on a single relative autonomy continuum. Simultaneous regressions revealed that SDT's integrated motivation was the primary predictor of activist commitment and SDT's intrinsic motivation was the primary predictor of non-burnout. These results offer insight into what motives should be encouraged and supported in environmental activists. Key Words: Environmental activism—Self-determination theory—Functional motives theory.

The Motivation of Environmental Activists

Environment and climate activists are famously committed to their causes (Eigner, 2001; Kovan & Dirkx, 2003; Sohr, 2001), despite the painfully slow pace of change. What can explain the dogged determination of activists, in the face of protracted frustration? Our research attempted to answer this question by drawing from two major theories of motivation: self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000) and functional motives theory (FMT; Clary et al., 1993; Cooper et al., 2008; Snyder & Cantor, 1998). In addition to thoroughly characterizing activist motivation using the measurement tools provided by these theories, we also sought to compare and contrast the two theories themselves. From a measurement perspective, can either theory subsume or incorporate the other? Also, which theory works better for predicting important outcomes in activists, such as maintained commitment and absent burnout and stress?

We believe this analysis is timely because new research suggests that motivational perspectives can deliver important understanding of why people attend to and work toward environmental goals and outcomes (Pelletier et al., 2008; Psychologists for Social Responsibility & Friends of the Earth, 2011). For example, Spash, Urama, Burton, Kenyon, Shannon, and Hill (2009) showed that motivational concepts can go far beyond traditional economic models and assumptions in explaining people's willingness to endorse environmental initiatives (see also McKenzie-Mohr et al., 1995). Alisat, Norris, Pratt, Matsuba, and McAdams (2014) analyzed the narrative identities of activists, showing that the motivation to engage with the environment emerges naturally from certain critical life-experiences (see also Fielding et al., 2008). Kovan and Dirkx

AU1

SHELDON ET AL.

discussed the “transformational learning” of activists, in which they come to recognize how the environment calls them to action. Lee, Kim, Kim, and Choi (2014) assessed the environmental or biospheric values of activists, as did McFarlane and Boxall (2003) and Van der Werff, Steg, and Keizer (2014); Lee et al. (2014) found that values were better predictors of environmentally friendly behavior than social structural, demographic, or early socialization variables. Sohr (2001) and Eigner (2001) both discussed the life goals of activists, finding that hypermotivated activists had greater well-being and a greater sense of meaning than either less extreme activists or normal controls. Venhoeven, Bolderdijk, and Steg (2013) showed that the sense of meaning derived from environmental behaviors can boost people's mood and motivate further behavior.

Pelletier and colleagues (Lavergne & Pelletier, 2015; Pelletier, 2002; Pelletier et al., 1998; Séguin et al., 1999) have most directly addressed the nature of people's general environmental motivation, in a sustained program of research (presumably these lessons can also be applied to environmental activists, within limits). In an early review chapter addressing the question of how to motivate people to increase their levels of environmentally friendly behavior, Pelletier (2002) compared the effects of giving people information, providing them with external or monetary incentives, and supporting their internal motivation. Internal motivation was by far the most important predictor of a wide variety of environmentally friendly behaviors, including recycling, energy conservation, information search, and direct activism. Similarly, in a short-term longitudinal study, Osbaldiston and Sheldon (2003) showed that internal motivation for pursuing environmental goals was associated with greater success at doing the assigned environmental behaviors and also with stronger intentions to continue performing these behaviors after the study's conclusion. Bolderdijk and Steg (2015) focused explicitly on the risks of using financial incentives to motivate environmental behavior, noting a number of ways such incentives can fail to have the desired effect.

Self-Determination Theory

To explain the findings reported in the last paragraph, it is necessary to explain the main principles of SDT (Deci & Ryan, 1985, 2000). SDT is an organismic-dialectical theory of motivation that focuses on the question of whether people's activities have been internalized within their sense of self (Deci & Ryan, 1991). The theory begins with the assumption that people naturally tend to find and follow intrinsic motivations; that is, they seek out interesting and engaging activities in which the mere experience of doing the activity rewards and reinforces the activity. SDT views intrinsic moti-

vation as prototypically healthy motivation, both because it expresses people's evolving interests and emerging growth impulses and because it is associated with more sustained, creative, effective, and flexible functioning (Deci & Ryan, 1985). Unfortunately, intrinsic motivation may be undermined by the introduction of tangible rewards and incentives, such that the original motivation is replaced by external motivations. This entails that the behavior will be discontinued once the external incentives are removed (Deci et al., 1999). Thus, authorities are well advised to avoid incentivizing behaviors that subordinates are naturally inclined to do anyway.

But how should we think about important behaviors that are, by their nature, difficult or impossible to enjoy? SDT has long acknowledged that self-determined motivation can exist even in the absence of intrinsic motivation (Ryan & Connell, 1989). People can do something aversive (such as changing a baby's smelly diaper) while still having a full sense of self-determination, as long as they fully endorse the behavior (“my baby's health is so important to me!”). This is called identified motivation. The internalization process can go even further; one can do unpleasant necessities with a sense of integrated, not just identified, motivation. Integrated motivation occurs when one's different identifications are all linked together via overarching values or belief systems, providing those separate identifications with unity and commonality. There is also an intermediate motivation between internal and external, in which people seem to have to force themselves to act in order to avoid a sense of guilt or shame. This is termed introjected motivation, in which a partial degree of internalization has occurred.

These five motivations (external, introjected, identified, integrated, and intrinsic) can be lined up from left to right on a single continuum, which ranges from feelings of being controlled and non-self-determined (at the leftmost end), to feelings of being fully autonomous and self-determined (at the rightmost end; Sheldon et al., 2016). Incidentally, intrinsic motivation is located to the right of integrated motivation because intrinsic motivation is thought to be “automatically” internalized, whereas integrated motivation represents a high degree of internalization of what was formerly an external motivation. The Motivation Toward the Environment Scale (MTES), developed by Pelletier and colleagues (1998), contains subscales corresponding to each of these five facets of motivation. We employed the MTES in the current research, expecting its general patterns of findings to replicate in the current studies (Pelletier et al., 1998).

Functional Motives Theory

In our research we also considered a second major theory of motivation, one that has not been heretofore applied to environmental

THE MOTIVATION OF ENVIRONMENTAL ACTIVISTS

behavior: namely, the functional approach (Cooper et al., 1998; Snyder & Cantor, 1998). Functional motivation approaches are largely atheoretical. Instead of imposing a set of preordained concepts or constructs upon a particular behavior, functional motive researchers begin with an open-ended solicitation of the full variety of reasons people do the behavior, that is, the many functions the behavior can serve for people. After casting a wide net, the researchers then develop scales to measure the most important or most common functions that have been identified by the inductive analysis. For example, Clary et al. (1998), in a widely cited study of volunteer motivation, identified six functions of volunteering, that is, reasons that people engage in volunteer activity. Thus the six subscales of their Volunteer Functions Inventory (VFI) include

- (1) Values: to express or act on important values;
- (2) Understanding: to learn more about the world or exercise skills;
- (3) Enhancement: to grow and develop through volunteering;
- (4) Career: to gain career-related experience;
- (5) Social: to strengthen one's social relationships;
- (6) Protective: to reduce negative feelings such as guilt, or to address a personal problem.

This list is largely atheoretical because, unlike the SDT list, there is no assumed or statistically demonstrated ordering principle that links the different kinds of motivation, and also because the list was derived inductively rather than deductively. However, it should be stressed that the method of inductive derivation is a strength, because it ensures that all the major self-reported reasons people do "X" are represented and none are overlooked. Also, it is possible to add later theoretical elaboration to a functional approach. For example, Cooper et al. (1998) first derived a measure of five major kinds of sex motives (Coping, Enhancement, Intimacy, Conflict-Avoidance, and Self-affirmation). Via conceptual analysis Cooper et al. (1998), organized these in terms of an approach/avoidance and an intrapersonal/interpersonal dimension, locating each of the five motives in the two-dimensional space carved out by these dimensions. Again, however, these dimensions were discovered, rather than being stated *a priori*.

The Current Studies

In the current studies we attempted to predict the depth of commitment felt by self-reported environmental activists and also their ability to handle the stresses of being an activist, using both the MTES (Pelletier et al., 1998) and the VFI (Clary et al., 1998). We reasoned that the MTES would be appropriate for our purposes because it is a

well-validated measure of environmental motivation, which expresses important concepts within SDT. We reasoned that the VFI would be appropriate for our purposes because there is a fairly direct similarity between "reasons people volunteer" and "reasons people work for the environment." Both activities are unpaid for most people, and both involve contributing one's energies to help with an important social or communal problem. One major goal of our research was to test whether the VFI's subscales could be fit into the theoretical framework provided by SDT. In other words, we speculated that SDT's internal versus external motivation (or "relative autonomy") concept might provide a common structure within which both the MTES subscales and the VFI subscales could be located. Such a finding might help connect or integrate these two theories of motivation in a way that has not been done before. The second major goal of the research was to examine which type of measure better predicts the outcomes being examined. Which activist motivations, as specified by which type of theory, best predict sustained commitment and minimal burnout?

Study 1

We conducted two studies. In Study 1 we surveyed environmental activists in the Columbia, Missouri, community, as well as some activists from other locations in the United States.

Method

Participants and procedure

As part of her senior honors thesis research, the second author attended various environmental awareness events to hand out paper and pencil versions of the survey. She also e-mailed requests to people within her own activist network, sending them a link to an online version of the survey. Online participants were in turn requested to send the link to their own networks, instantiating a snowball sampling technique and broadening the sample. The survey began by defining activism as an activity whose goal "is to advocate a social or political cause (e.g., protecting the environment); the means of activism can vary greatly, e.g., from institutionalized acts like starting a petition to unconventional acts like civil disobedience" (Klar & Kasser, 2009). We asked participants to keep this definition in mind as they responded to the survey.

A total of 83 participants completed the survey, 55 women and 28 men, with 2 missing gender and 3 selecting "other." Participants ranged in age from 18 to 60, with 90% of respondents being 29 years old or less. Most participants were Caucasian and listed the United States as their country of origin. No important differences were observed between Columbia residents and other participants.

SHELDON ET AL.

Measures

Volunteer Functions Inventory (VFI; Clary et al., 1998). As noted above, this 30-item scale contains six motives for engaging in volunteer behavior: values, understanding, enhancement, career, social, and protective. Participants were asked to respond to 30 different completions of the statement “I engage in environmental activism because....” An example career motivation item is “I can make new contacts that might help my career;” an example “values” motivation item is “I am concerned about those less fortunate than myself.” An example enhancement item is “volunteering makes me feel important.” An example social item is “my friends volunteer.” An example “understanding” item is “I can learn how to deal with a variety of people.” An example “protective” item is “volunteering lets me work through my own personal problems.” Items were administered with a 1 (*not at all*) to 5 (*very much*) scale. Alpha reliabilities, in the order listed above, were .91, .88, .79, .82, .77, and .81.

Motivation Toward the Environment (Pelletier et al., 1998). The MTES includes six motivation subscales: intrinsic, integrated, identified, introjected, external, and amotivation. We did not employ the amotivation subscale since we were studying known activists; therefore, the survey included only 20 of the 23 MTES items. Example items include: “Pleasure in mastering new ways to help” (intrinsic), “An integral part of my life” (integrated), “Is a sensible thing to do” (identified), “Would feel guilty if I didn’t” (introjected), and “To avoid being criticized” (external). Items from the MTES were intermixed with items from the VFI within the motivation portion of the survey and were answered with the same response scale. Alphas were .61, .62, .66, .84, and .78, respectively.

Activist Identity and Commitment (Klar & Kasser, 2009). This scale includes eight items assessing current commitment (e.g., “I identify myself as an activist”). For the purposes of the study, we added three additional items to measure future commitment intentions: “I will definitely be involved in environmental activism one year from now,” “I intend to make my career in the area of environmental activism,” and “As time goes by, I expect I will be working harder and harder in this area.” Again a 1–5 scale was used ranging from *not at all* to *somewhat* to *very much*. An overall commitment score was computed by averaging the nine items ($\alpha = .96$). Notably, we counter-balanced the order of administration so that some participants completed the commitment items before the motivation items and other participants completed the commitment items after rating the motivation items. The order factor had no effect and hence will be ignored.

Maslach Burnout Inventory (Maslach et al., 1997). This inventory has three subscales and 22 items. We only employed the “emotional exhaustion” subscale. Example items are “I feel frustrated by my activism” and “I feel burned out from my activism.” The same 1–5 response scale was employed ($\alpha = .90$).

Results

Table 1 contains descriptive statistics for the major study variables. As can be seen, the MTES motives with the highest sample mean levels were identified, intrinsic, and integrated (when we compared these three subscale means to the introjected and external subscale means, all six t values were greater than 2.27). Identified and intrinsic motivations were equivalent to each other, but both were significantly greater than integrated motivation (both t values >2.06). From the VFI, the “values” mean was significantly higher than the other five VFI subscales (all t values >6.05), and the values mean was also significantly higher than all five of the MTES subscales (all t values >2.36). Together, these means already suggest that

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Table 1. Study 1: Descriptive Statistics

SCALE	MEAN	STANDARD DEVIATION	RANGE
Commitment	3.86	.90	1.18–5.00
Burnout	2.41	.81	1.00–4.50
VFI-Values	4.52	.58	2.50–5.00
VFI-Understanding	3.98	.79	1.20–5.00
VFI-Enhancement	3.29	.96	1.00–5.00
VFI-Social	2.83	.90	1.00–4.67
VFI-Protection	2.78	1.01	1.00–5.00
VFI-Career	2.60	1.04	1.00–5.00
MTES-Intrinsic	4.34	.60	2.25–5.00
MTES-Identified	4.34	.62	2.50–5.00
MTES-Integrated	4.14	.89	1.75–5.00
MTES-Introjected	3.88	.88	1.67–5.00
MTES-External	2.00	.69	1.00–3.75

Note. Means are arranged from highest to lowest within each inventory (VFI vs. MTES).

THE MOTIVATION OF ENVIRONMENTAL ACTIVISTS

strong internal or value-based motivation is a dominant theme within this group of participants.

Next we directly compared the two different sets of motivation measures, one derived from SDT and one from FMT, by conducting an exploratory principal components analysis of the 11 subscale scores. The first two components accounted for 42% and 17% of the variance, respectively, and were selected by scree test for further evaluation (subsequent components accounted for 11, 7, 5, 5, 4, 3, 2, 2, and 2 percent of the variance). Table 2 contains the loadings of the 11 subscales upon these two components. The first component, which we have labeled “internal motivation,” contains four of the five MTES subscales excepting external motivation. These four types of motivation are all at least somewhat internalized, according to SDT, although introjection is usually considered as an intermediate case. In addition, the values and understanding subscales of the VFI loaded on this first factor. This is perhaps unsurprising, since VFI values motivation and MTES identified motivation are conceptually similar, and since VFI understanding motivation and MTES intrinsic motivation are also similar. Still, motivation to understand also cross-loaded on the second component, along with the remaining four VFI subscales: career, enhancement, social, and protective motivation.

Table 2. Study 1: Loadings of the 11 Motivation Subscales upon the Two Principal Components

MOTIVATION SUBSCALE	INTERNAL MOTIVATION	EXTERNAL MOTIVATION
Identified	.89	
Integrated	.85	
Values	.80	
Intrinsic	.85	
Introjected	.51	
<i>Understanding</i>	.51	.63
<i>Enhancement</i>		.82
<i>Social</i>		.76
<i>Career</i>		.73
<i>Protection</i>		.68
External		.62

Note. Italicized subscales are from the VFI, non-italicized subscales from the MTES. Coefficients $\leq .31$ omitted.

We labeled this second component “external motivation” because it is largely constituted by motives that involve instrumental concerns (i.e., career, social, or emotional benefits). Notably, essentially the same two-factor pattern emerged when we used principle axis factoring, rather than principle components analysis. Principle axis factoring attempts to identify latent variables rather than simply partitioning all variance. We also found the same basic pattern when we used oblique (oblimin) rotation, rather than orthogonal (varimax) rotation. Oblique rotations allow underlying factors to be correlated.

In addition, we used a second psychometric approach to compare the two sets of measures, by performing a joint multidimensional scaling analysis on the 11 subscales. With SDT measures, this approach is used to empirically locate various subscales upon an underlying relative autonomy index (RAI) continuum (Roth et al., 2006; Sheldon et al., 2016). We expected to find the RAI continuum underlying the MTES subscales within our data and intended to evaluate whether the RAI continuum could also characterize the VFI subscales. Specifically, we used Guttman-Lingoes nonmetric multidimensional scaling implemented in Statsoft Statistica 6 (Borg & Lingoes, 1987; Guttman, 1968) applied to Euclidean distance matrix and Pearson correlation matrix of the 11 MTES and VFI scales. The loadings in the one-dimensional solution were highly similar across the two solutions ($r = .97$, $p < .001$), but with Euclidean distances the fit indices supported a unidimensional solution (stress = .079, alienation = .110), whereas with the correlation matrix they indicated higher dimensionality (stress = .295, alienation = .361). Because the correlational structure may be less stable in small samples, we opted for the Euclidean distance solution.

According to this solution, the 11 subscales could be located in the following one-dimensional sequence (with loadings given in parentheses): Values (1.15), Intrinsic (1.01), Identified (.97), Integrated (.88), Understanding (.56), Introjected (.48), Enhancement (–.31), Social (–.77), Protection (–.95), Career (–1.20), and External (–1.83). The ordering of the five MTES scales relative to each other was generally in line with the relative autonomy continuum (Sheldon et al., 2016). The ordering of the six VFI scales with respect to each other also made sense from the SDT perspective, as the sequence ranged from value expression at the high end to utilitarian motives at the low end. When the 11 subscales were considered together, it was noteworthy that the VFI “values” subscale was locatable furthest along the relative autonomy continuum, with its score of 1.15.

To advance our second study goal, we conducted two separate regression analyses, one for the commitment variable and one for the emotional exhaustion variable, in which all 11 motivation subscales were entered simultaneously as predictors. This enabled us to

SHELDON ET AL.

examine which subscales share the most unique predictive variance with these two very important outcomes. In the activist commitment analysis, only one predictor emerged: Integrated motivation (“activism is an integral part of my life;” $\beta = .70$, $SE = .134$, $p < .01$). None of the other motivations approached significance. In the emotional exhaustion analysis, external motivation was significant and positive (“others would be upset if I were not involved;” $\beta = .46$, $SE = .118$, $p < .01$), and intrinsic motivation was negative (“I find pleasure in mastering new ways to help;” $\beta = -.29$, $SE = .128$, $p < .01$); none of the other nine subscales approached significance. These results are consistent with the notion that internal motivations play a very significant role in environmental commitment.

Brief Discussion

Study 1 demonstrated that the six VFI subscales could be located within the same two-factor structure as the five MTES subscales, with four of the six VFI subscales loading cleanly and solely on the external motivation factor, one subscale loading on the internal motivation factor, and one subscale (“understanding”) cross-loading on the two factors. Also, a multidimensional scaling analysis showed that the VFI subscales could all be located on the same relative autonomy continuum as the MTES subscales, in ways that are logical and interpretable. Interestingly, the VFI “values” subscale was located furthest along the RAI continuum in this analysis, even further along than the SDT intrinsic, identified, and integrated subscales. Befitting the factor analytic results, however, the other VFI subscales were locatable much further down on the RAI continuum, in the region of introjected motivation and external motivation.

Study 1 also compared the 11 subscales as predictors of activist commitment and burnout, finding that the healthiest environmental activists (i.e., the ones with the greatest commitment and the least emotional exhaustion) are those with the greatest integrated motivation, the greatest intrinsic motivation, and the least external motivation. All three of these subscales came from the MTES, suggesting that it may not be necessary to use the VFI to assess the healthiness of activists’ motivational profiles (despite the fact that the “values” subscale was highest in relative autonomy). However, given the high levels of multicollinearity between some of the predictor variables, and given the small sample, this finding needs to be replicated.

In sum, Study 1 supplied a seemingly clear answer to the question “what are the predominant motivations characterizing environmental activists” and also “which theory of motivation can best measure and explain these motivations?” The answers are apparently “intrinsic and integrated motivation” and “self-determination theory.” However, Study 1 primarily sampled activists in the Midwestern

United States and only sampled contacts within the second author’s own network of friends and associates. Thus it is not clear how representative or unbiased the sample is with respect to “activists in general.” Study 2 sought to rectify these problems by replicating the data patterns within a much more diverse set of self-described environmental activists.

Study 2

Study 2 employed a sample of Mechanical Turk (mTurk) workers who were recruited based on their interest in or plans to attend the COP21 (Paris) summit. Study 2 also consisted of volunteers who responded to notices posted on social media pages and on conference Listservs for the 2014 Lima climate change conference. We hoped to show that our results could generalize the Midwestern United States to perhaps address and describe the motivation of all activists, located around the world.

Method

Participants and procedure

In early 2015, a survey with the label “Environmental activist survey” was posted on several Listservs and on the Amazon mTurk Web site. On mTurk, the following solicitation was given:

Please participate in this survey if you identify as an environmental activist and have attended or been involved in a conference or summit relating to environmentalism, climate change, sustainability, or a similar issue. This includes, but is not limited to, the United Nations Conference on Climate Change.

Participants were offered \$.50 for doing the survey. The survey began with the same definition of activism given above (Klar & Kasser, 2009).

Study participants were 108 self-identified activists: 43 women, 64 men, and 1 transgender. Their ages ranged from 19 to 64, with a median age of 32 years. Forty-three percent of participants self-identified as White and 41% as Asian; 4% were Native American, 3% were Black/African American, and 7% were Hispanic/Latino. A wide variety of countries were represented including Australia, New Zealand, India, Taiwan, Kenya, Puerto Rico, Canada, Poland, Peru, Spain, Germany, Singapore, Chile, and Bolivia. However, the United States had the greatest representation.

Measures

Exactly the same items and response scales were used as in Study 1. All alpha coefficients were .78 or greater.

THE MOTIVATION OF ENVIRONMENTAL ACTIVISTS

Results

T3 Table 3 presents descriptive statistics for all the study variables. Subscale mean results were very similar to those of Study 1. Identified and intrinsic motivation were the two highest MTES means, whereas integrated motivation was again a small but significant step down, suggesting that the internalization process has not proceeded quite as far regarding this form of motivation. Values was again the highest-scoring subscale from the VFI, but in Study 2 the values mean was the same as, rather than being higher than, the means for MTES identified and intrinsic motivation.

T4 We again compared the two theoretically derived sets of motivation measures by conducting a principal components analysis of the 11 subscale scores. The first two components accounted for 54% and 20% of the variance, respectively. Table 4 contains the loadings of the 11 subscales upon these two components. The pattern of loadings was essentially identical to those observed in Study 1: Four of the five MTES scales loaded on a first, "internal motivation" component, with the MTES external motivation subscale loading on the second, "external motivation" component. Of the six VFI scales, values mo-

Table 3. Study 2: Descriptive Statistics

SCALE	MEAN	STANDARD DEVIATION	RANGE
Commitment	3.73	.81	1.00–5.00
Burnout	2.55	1.13	1.00–5.00
VFI-Values	3.87	.78	1.00–5.00
VFI-Understanding	3.67	.90	1.00–5.00
VFI-Enhancement	3.52	1.00	1.00–5.00
VFI-Career	3.24	1.04	1.00–5.00
VFI-Social	3.22	.98	1.00–5.00
VFI-Protection	3.18	1.06	1.00–5.00
MTES-Intrinsic	3.98	.76	1.00–5.00
MTES-Identified	3.95	.80	1.00–5.00
MTES-Integrated	3.69	.84	1.00–5.00
MTES-Introjected	3.49	1.05	1.00–5.00
MTES-External	2.82	1.08	1.00–5.00

Note. Means are arranged from highest to lowest within each inventory (VFI vs. MTES).

Table 4. Study 2: Loadings of the 11 Motivation Subscales upon the Two Principal Components

MOTIVATION SUBSCALE	INTERNAL MOTIVATION	EXTERNAL MOTIVATION
Identified	.88	
Integrated	.81	
Values	.86	
Intrinsic	.85	
Introjected	.61	
Understanding	.69	.53
Enhancement		.77
Social		.86
Career		.81
Protection		.89
External		.87

Note. Italicized subscales are from the VFI, non-italicized subscales from the MTES. Coefficients $\leq .41$ omitted.

tivation again loaded on the first component, and understanding again cross-loaded on the two components. The rest of the VFI subscales loaded only on the external motivation component, as in Study 1.

We also conducted the same type of multidimensional scaling analysis as in Study 1, finding a similar pattern of results. As before, the scale coordinates derived from Pearson correlation matrix and Euclidean distance matrix were highly convergent ($r = .99$, $p < .001$) with better fit indices for the latter (stress = .171, alienation = .216). The analysis found that the 11 subscales could be located in the following order on the RAI continuum (loadings giving in parentheses): Intrinsic (1.33), Identified (1.27), Values (.85), Integrated (.74), Understanding (.44), Introjected (.24), Enhancement (–.35), Social (–.75), Career (–.88), Protection (–.96), and External (–1.93). Notably, within each set of subscales (MTES and VFI), the sequence remained the same as in Study 1; the primary difference between the studies was that in Study 2 the VFI values subscale was not locatable at the extreme of the relative autonomy continuum, instead being locatable further down the continuum (although still within the set of internal subscales). We might speculate that values are somewhat less important for mTurk workers who are completing the survey for money.

SHELDON ET AL.

To advance our second study goal, we again conducted two separate regression analyses, one for the commitment variable and one for the emotional exhaustion variable, in which all 11 motivation subscales were entered simultaneously as predictors. As in Study 1, in the activist commitment analysis, MTES integrated motivation was the strongest predictor ($\beta = .64, p < .01$). However, in the Study 2 data, VFI values was also significant ($\beta = .30, p < .01$). In the emotional exhaustion analysis, external motivation was again significant and positive ($\beta = .53, p < .01$), and intrinsic motivation was again negative ($\beta = -.32, p < .01$); none of the other nine subscales approached significance. Thus these results are again consistent with the notion that internal motivations play a very important role in environmental commitment. The only difference between the Study 1 and Study 2 findings was that in Study 2 the VFI values motivation subscale emerged as a co-predictor of activist commitment along with the MTES integrated motivation subscale.

Brief Discussion

Study 2 fully replicated the major findings of Study 1, using a more international sample of environmental activists. Again, the MTES subscales emerged as the more effective predictors of the outcome variables.

General Discussion

In these studies we sought to understand the motivations of environmental activists, that is, people who willingly engage in the frustrating and interminable task of nudging human civilization toward a more sustainable path. We did this both to try to understand the underlying sources of activists' strong commitment to their cause and to understand how activists resist emotional burnout in the face of the many difficulties. We also hoped to compare two major theories of the "why" of motivation, namely SDT and FMT, as to their relative adequacy for predicting the outcomes. Again, functional motive approaches typically eschew theory, instead relying on people's lay beliefs regarding why they do X. Although this is in principle an important strength of this approach, it is possible that the approach fails to address important motivational issues that are addressed by SDT. To examine these questions, Study 1 sampled local community activists in the Midwestern United States, and Study 2 sampled a more international population of activists.

Our findings formed a consistent pattern. In both studies the highest mean levels of motivation occurred for the "internal" motivations, as designated by SDT. These included intrinsic, identified, and integrated motivations from the MTES and the value and ex-

ploration motivations from the VFI. Furthermore, although functional motivation research approaches are typically atheoretical, the VFI subscales conformed fairly well to the two-component theoretical structure derived from SDT. This suggests that SDT concepts can be profitably used to interpret or organize data derived from the VFI. Further supporting this conclusion, multidimensional scaling analyses indicated that all 11 subscales could be located on SDT's "relative autonomy continuum," not just the five subscales that were explicitly derived from SDT. However, Study 1 located the VFI "values" subscale at the rightmost extreme of the RAI continuum, whereas Study 2 located VFI values more in the middle of the pack of internal motivations.

Turning to the outcome variables, in Study 1 only the MTES was needed to explain activist commitment (specifically, the integrated motivation subscale) and burnout avoidance (specifically, the combination of high intrinsic motivation and low external motivation). In Study 2 these same three MTES effects were replicated, but the values motivation subscale of the VFI also joined the set, in the analysis predicting activist commitment.

The findings raise several intriguing discussion issues. One concerns the apparent stress- buffering effects of intrinsic motivation. We began with the assumption that many activist behaviors, such as handing out flyers, updating mailing lists, and making phone calls, are not very enjoyable. If so, then in order for people to do such behaviors autonomously, they must somehow internalize them into their sense of self. However, we discovered that mean levels of intrinsic motivation were just as high as mean levels of identified motivation. This suggests that activists actually enjoy what they are doing, overall, even if certain kinds of behavior may be tedious or repetitive. It is especially intriguing that intrinsic motivation, which is fully internalized according to SDT and involves no internal resistance, provided the best defense against burnout in the Study 1 and 2 regression tests. Reinforcing this idea, external motivation, which involves no internal motivation at all according to SDT, was also a consistent predictor, but of greater, not lesser, burnout.

We can thus conclude that burnout occurs when people only feel forced in doing, and derive no enjoyment from, their behavior (Sullivan et al., 2014). Future research could investigate what types or aspects of environmental activities are most enjoyable or what strategies activists use to make otherwise burdensome activities interesting and engaging. We speculate that the "common cause" shared by many activists enhances their ability to enjoy each other's company, providing them with a social identity (Tajfel & Turner, 2004) that is rewarding in its own right; however, new data is required to test this idea. Notably, introjected motivation, in which

THE MOTIVATION OF ENVIRONMENTAL ACTIVISTS

people force themselves to act, had no effects in the current data. This renders somewhat questionable some research suggesting that guilt may be a primary driver of environmental motivation (Harrison & Mallett, 2013; Mallett, 2012), or at least the idea that using “ecoguilt” as a motivator (Mallett, 2012) can produce truly engaged activists.

It is also worth discussing the results for integrated motivation. Integrated motivation is not always assessed by SDT researchers, because it is highly abstract, because it can be difficult to measure well, and because it may largely overlap with identified motivation anyway (Roth et al., 2009). However, in the current research it was well worth including this subscale. Perhaps this is because of the nature of the population being studied; environmental activists are people who are engaged in an intense and yet voluntary calling, a calling that has global meaning and global implications. In such populations, the sense that one’s behavior permeates one’s life and one’s value system may be a very important feeling. It is also noteworthy that integrated motivation had a lower mean than intrinsic and identified motivation, in both Study 1 and Study 2. Again, SDT assumes that people must go through an internalization process in order to perform difficult or frustrating behaviors with a full sense of self-determination. In our two samples, activist behavior had apparently not yet made it “all the way in,” in that people did not endorse integrated motivation to quite the same degree as they endorsed identified and intrinsic motivations. Perhaps it takes more time to complete the integration of the activist identity with the rest of the person’s identity.

Finally, it is worth discussing the results obtained with the VFI. Again, the VFI subscales could be organized in our data by the concepts of internal and external motivation and also by the concept of the relative autonomy continuum. These findings add a formerly unrecognized theoretical dimension to the VFI measure. The career, social, and protective motivation subscales of the VFI loaded on the “external” component, as might be expected given that these subscales address clear instrumental functions of behavior for the person, namely, to build career, social, or coping resources. Moreover, the values subscale and the exploration subscale of the VFI both loaded on the internal motivation component, as might be expected given their similarity to identified and intrinsic motivation. Yet the understanding subscale (“to learn more about the world or exercise skills”) also cross-loaded on the external component, and furthermore, the enhancement factor (“to grow and develop through volunteering”) loaded only on the external component.

The latter finding in particular is puzzling, since “growth and development” sounds like a very internal motivation. Inspection of the actual items offers a clue, however; the enhancement subscale

includes the items “it makes me feel important,” “it makes me feel needed,” “it increases my self-esteem,” and “it makes me feel better about myself.” Thus, it could be argued that the VFI enhancement scale is more about ego enhancement rather than personal development, which would explain its location on the external motivation factor, given that self-esteem motivation has been described as a potentially corrosive type of ego-involved striving that tends to work against true satisfaction (Crocker & Park, 2004). Overall, it appears that the VFI may not be needed if researchers are interested in the mental health implications of volunteer motivation; an SDT approach may be sufficient. Still, the Study 2 results suggest that the VFI “values” subscale might be included by researchers interested in the full spectrum of values-based behavior. And of course, the remaining VFI subscales could still perform very well for predicting different kinds of activist outcomes besides mental health, including behavioral outcomes; also, the other VFI subscales could still be very useful for understanding or explaining more mundane levels of volunteerism.

It is noteworthy that one other study has compared the MTES to another type of motivation measure: de Groot and Steg (2010) examined both the MTES and their own measure of egoistic, altruistic, and biospheric values based on the Schwartz values model. The various subscales of these two measures were compared as predictors of intentions to buy an environmentally friendly car and intentions to donate to environmental causes. De Groot and Steg (2010) reported a complex but comprehensible pattern of results that suggested that their values measure may somewhat better predict the outcomes than the MTES. Notably, however, in conventional SDT parlance the MTES is a measure assessing the “why” of, or reasons behind, motivation (“why do you engage in environmental behaviors?”), whereas the de Groot and Steg (2010) measure assesses the “what” or content of motivation (Deci & Ryan, 2000). The “what” and “why” factors tend to have independent effects; thus it is perhaps unsurprising that their measure accounted for variance that the MTES did not. Still, our failure to include the de Groot and Steg measure is a limitation of the current research.

There are a number of limitations to these studies, besides the merely correlational data. First, Study 1 participants self-selected into the study; thus we cannot be sure that the results generalize to all activists. It could be that those most willing to take the survey are also the most internally motivated to start with, potentially skewing the picture. Still, the inclusion of Study 2’s paid mTurk sample perhaps helped balance the equation. Second, our results could be skewed by social desirability; activists may know that external motivations would appear ignoble, were they acknowledged. Unfortunately, we

SHELDON ET AL.

did not include a measure or control for social desirability within these studies. A third limitation was that the survey was cross-sectional only; thus we cannot conclude that motivation caused the outcomes of commitment and/or low burnout. Longitudinal research will be required to test dynamic process models of how activists come to be who they are and how they manage to remain resilient in the face of difficulties. Fourth, our research contained no behavioral component; thus we cannot be sure that those who claim to be the strongest activists are really “walking the talk” implied by their value and motivational statements (Sheldon & Krieger, 2014). This fourth limitation was imposed by the self-report survey format of our research. Fifth, our research did not examine the possibilities for increasing people's integrated or intrinsic motivation to perform environmental behaviors and the further possibility that increasing such motivations might eventually lead them to become activists. These issues remain for future research. Despite these limitations, the current research does study a relatively under-addressed, hypermotivated population, namely environmental activists, and also succeeds in showing which theory of motivation is most relevant for understanding their vehemence, namely, SDT.

Conclusion

In conclusion, environmental activists appear to be strongly internally motivated to do their work, despite the frustrations involved and the uncertain outcomes of that work. Specifically, our results provide insight into what kinds of motivations should be promoted in order to reduce burnout and boost commitment in this population. In particular, results suggest that introducing external incentives, focusing attention on career concerns, or using guilt or shame may all be ineffective for motivating this population. It may be more effective to help activists fully integrate their environmental motivation with the rest of their values and find ways to enjoy their environmental activities, even when they become stressful or tedious.

Acknowledgment

This article was prepared within the framework of a subsidy granted to the HSE by the Government of the Russian Federation for the implementation of the Global Competitiveness Program.

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Received: May 17, 2016
 Accepted: August 22, 2016

- AU1: The following are in the text but are not found in the reference list: Clary et al., 1993; Cooper et al., 2008; Sheldon & Krieger, 2014. Please reconcile.
- AU2: Replaced ts with t values four times in this paragraph. Is that ok?
- AU3: Please complete the reference for Maslach et al. (1997).
- AU4: Update Sheldon et al. (2016) if available.